

REMARKS/ARGUMENTS

Applicant acknowledges the thorough examination of the current application. Applicant notes that the main focus of the present application is on tracking light paths to detect any misrouted light paths. A misrouted light path is a light path set up to start at a specific source node and end in a specific destination node but, due to equipment malfunction or human error, the path may end in a node other than the legitimate destination node. Such a fault has very serious operational and security implications.

The first, second, third, and fourth procedures recited in claim 1, as well as the corresponding first, second, third, and fourth means recited in claim 16, are devised to detect light path misrouting. Collectively, the four procedures of claim 1 do not map onto the combination of Heismann and Rajagopal. Heismann describes an optical-signal tracking system for an all-optical network using identifying tones. Rajagopal discloses a method comprising identifying a current path for traffic traveling from a source node to a destination node and identifying a detour path from the source node to the destination node traversing a detour node (please see claim 1 in Rajagopal). A current path is a planned path, and a detour path is also a planned path as clearly explained by the Examiner on page 3, line 27 of the advisory action:

“Examiner respectfully notes that detour paths are also planned paths.”

Thus, the combination of Heismann and Rajagopal does not produce a method or a system for tracking misrouted paths.

Notes Regarding Claim Language

(1) On page 3 line 5 of the advisory action, the Examiner states: “Regarding the first difference, Examiner respectfully notes that misdirected routes are not in the claim language.”

Applicant notes that the steps recited in claim 1 collectively distinguish the claimed method from any method derived from a combination of Heismann and Rajagopal. Applicant does, however, appreciate the Examiner’s observation and has accordingly

amended both the preambles and claim contents, of claim 1 and counterpart system claim 16, to explicitly limit the claims to misrouted light paths.

(2) On page 3, line 11, of the advisory action, the Examiner states: “Regarding the ‘claimed system does not require interconnecting the nodes of the Optical Communication Network to management nodes’, Examiner respectfully notes that this aspect of Applicant’s system is not in the claim language”.

(3) On page 4, line 1, of the advisory action, the Examiner states: “Examiner respectfully notes that these features of the host not requiring processing baseband data, not requiring optical-to-electrical conversion, not requiring sophisticated receivers, and not requiring additional management nodes are not in the claim language”.

(4) On page 4, line 17, of the advisory action, the Examiner points out that the features of not being concerned with traffic engineering, not being traffic-aware, and tracking misdirected light paths are not in the claims.

(5) On page 4, line 27, of the advisory action, the Examiner points out that the feature of identifying a path which deviates from its planned trajectory is not in the claim language.

(6) On page 4, line 41, of the advisory action, regarding the argument concerning claim 3, the Examiner points out that the term “monitoring” is missing the claim language.

(7) On page 5, line 1, of the advisory action, regarding the argument concerning claim 7, the Examiner points out that words “misdirected paths” are missing the claim language.

Applicant has amended relevant claims to address the claim-language deficiencies (2)-(7) pointed out by the Examiner. Implied aspects such as “not requiring sophisticated receivers”, “not being concerned with traffic engineering”, and “not being traffic-aware” are not mentioned in the amended claims.

Claim 1 has been amended to more clearly define the claimed method by adding further limitations:

- (1) indicating that monitoring the light path is performed “to ascertain adherence of said light path to a planned trajectory and detect deviation of said light path from the planned trajectory”;
- (2) clarifying that identifying the first sequence of optical nodes receiving said optical signature is “based on identifying said optical signature in the optical domain without optical-to-electrical conversion”;
- (3) indicating that the step of flooding covers all optical nodes “including optical nodes extraneous to said planned trajectory”, which is crucial for identifying a light path that may have strayed away from its planned trajectory; and
- (4) indicating that the four recited procedures are executed “without resorting to a network management system”.

Applicant notes that none of the added limitations (1), (3), or (4) results from a combination of Heismann and Rajagopal. For this reason, it is respectfully requested that the rejection of claim 1 be withdrawn.

It is noted that limitation (2) above is added merely to emphasize the important feature of identifying the first sequence of optical nodes within the optical domain.

Claim 3 has been amended to indicate that the step of constructing the current list of optical nodes relies on “monitoring said light path between the source optical node and the destination optical node from said selected start optical node”.

Claim 7, depending on claim 1, has been cancelled. The language of claim 7 has been transferred to claim 8 which now depends directly on claim 1.

Claim 13 has been amended to delete redundant material and to clarify that messages are sent to optical nodes, “including optical nodes extraneous to said planned trajectory”. This feature enables identifying optical nodes improperly traversed by a light path.

Claim 15 has been amended to delete redundant information.

Claim 16, which claims a system implementing the method of claim 1 has been amended to add the limitations:

“to detect deviation of said light path from a planned trajectory”,

“without optical-to-electrical conversion”,

“including optical nodes extraneous to said planned trajectory”, and

“without resorting to a baseband management system”.

As amended, claim 16 is distinguished from any combination of Heismann and Rajagopal. It is, therefore, respectfully requested that the rejection of claim 16 be withdrawn.

Claim 18 has been amended to indicate that the means for constructing the list of optical nodes relies on “means for monitoring said light path between the source optical node and the destination optical node from said start optical node”

Claim 27 has been amended to indicate that the means for sending messages covers optical nodes “including optical nodes extraneous to said planned trajectory.”

Claim 29 has been amended to delete redundant information.

Finally, given that the Heismann reference is primarily directed to the physics of optical-signal tracking while Rajagopal is directed to routing in a network, it is important to emphasize that the routing system in Rajagopal is based on properly threaded paths between source and destination while the present application is directed to a system of ensuring that each light path in an optical network is properly threaded by detecting misrouted light paths. On page 2, line 14, of the advisory action the Examiner states “ such examples merely illustrate the core focus of the teachings of multi-path analysis for managing machine communications in a network (Rajagopal col.1: 7-10). The broad scope of these teachings are emphasized by statements such as ‘the method for identifying the current paths in block 200 may include many techniques and many variations’ (Rajagopal col. 4:29-30)”

Applicant respectfully notes that Rajagopal clearly refers to planned paths connecting a source node to a destination node. Block 200 of FIG. 2 in Rajagopal applies to “a process of deriving alternate routes paths determined through choices made by dynamic routing ...”. Clearly, such alternate paths (or routes) do not include a light path that has gone astray (due to some malfunction). Please see Rajagopal, col. 4:13-19: “FIG. 2 is a logic flow diagram illustrating a process for **deriving alternate routes** through a network. The process begins at block 200, in which current network paths are discovered for all TMNs acting as both source and destination. The paths identified in this topology discovery block may be the **paths determined** through choices made by an existing dynamic routing algorithm used in the network.”.

SUMMARY

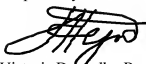
Claims 1-5, 8-10, 13-20, and 22-29 are pending. Claim 7 is cancelled. Independent claims 1, and 16 have been amended by adding limitations which clearly distinguishes the claimed invention from any combination of Heismann and Rajagopal. Claims 3, 8, 13, 15, 18, 27 and 29 have been amended to improve claim language based on the Examiner’s observations.

Claims 2-5, 8-10, and 13-15 depend from claim 1 believed to be allowable in view of the amendments.

Claims 17-20 and 22-29 depend on claim 16 believed to be allowable in view of the amendments.

No new material has been added by way of the above amendments. In view of the foregoing, early favorable consideration of the application is earnestly solicited.

Respectfully submitted,



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